



THYROID CANCER

Stimulated thyroglobulin levels obtained after thyroidectomy are a good indicator for risk of future recurrence from thyroid cancer

BACKGROUND

Thyroid cancer is the fastest rising cancer in women. Initial therapy includes thyroidectomy which is often followed by radioactive iodine therapy. After initial thyroidectomy, patients with thyroid cancer are at risk for recurrence of their cancer in the neck and/or lungs/bones. Currently, the treating physician estimates the risk for thyroid cancer recurrence based on the cancer's pathologic characteristics such as the presence of cancer invasion into blood vessels, spread of cancer to the lymph nodes and the type and size of the cancer. Patients are classified as low, intermediate or high risk for future recurrence based on those characteristics. Thyroid cancer treatment is customized based on that risk. Thyroglobulin is a protein secreted only by thyroid cells, both normal and cancerous thyroid cells. After thyroidectomy and removal of most of the normal thyroid cells, blood levels of thyroglobulin fall and are often undetectable. Blood thyroglobulin levels are used to detect thyroid cancer recurrence, as an increase after thyroidectomy likely comes from thyroid cancer cells. In this study, the authors examined the ability of thyroglobulin levels measured after initial thyroidectomy to accurately predict the chance for future thyroid cancer recurrence in high risk patients.

THE FULL ARTICLE TITLE

Piccardo, A. et al. Focus on high-risk DTC patients: high postoperative serum thyroglobulin level is a strong predictor of disease persistence and is associated to progression-free survival and overall survival. *Clin Nucl Med* 38 (1): 18-24, 2013.

SUMMARY OF THE STUDY

A total of 243 patients with high risk thyroid cancer were selected for the study. They were all treated similarly with total thyroidectomy and radioactive iodine therapy while

they were off thyroid hormone replacement. Thyroglobulin levels were measured before the first radioactive iodine therapy. The patients were followed for an average of 5 years. The authors recorded the response to the initial thyroid cancer treatment and subsequent treatments (if any). The ability of initial thyroglobulin measurement to predict the response to thyroid cancer therapy and overall patient outcome was then studied.

The authors showed that a thyroglobulin level > 50 ng/dl after initial surgery and without thyroid hormone replacement is able to accurately predict future reappearance of thyroid cancer in 97% of high risk patients, while an undetectable thyroglobulin level was a good predictor of an excellent outcome from thyroid cancer in most high risk patients (126 out of 136 patients).

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Thyroglobulin levels after initial surgery are a good predictor of future thyroid cancer reappearance in patients deemed to be at high risk for cancer recurrence based on clinical characteristics. Thyroglobulin level can therefore be measured after surgery to help guide patient follow up and treatment.

— Mona Sabra, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: <http://www.thyroid.org/cancer-of-the-thyroid-gland>

Radioactive Iodine Therapy: <http://www.thyroid.org/radioactive-iodine>

Thyroid Surgery: http://thyroid.org/patients/patient_brochures/surgery.html

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THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the

treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).

Cancer recurrence: this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.